Initial reliability and validity of a new measure of perceived social support for family members of problem substance users

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INITIAL RELIABILITY AND VALIDITY OF A NEW MEASURE OF PERCEIVED SOCIAL SUPPORT FOR FAMILY MEMBERS OF PROBLEM SUBSTANCE USERS

ABSTRACT

Aims

To describe the development of a questionnaire for assessment of the perceived functional social support needs of family members who have relatives with substance-related problems.

To present preliminary evidence of its reliability and validity, thus completing the set of measures required to quantitatively assess the Stress-Strain-Coping-Support (SSCS) model of addiction and the family.

Design

A mixed methodological approach utilising interview, cross-sectional and repeated-measurement data was adopted to operationalise social support specific to family members.

Participants

Adult family members affected by the problem alcohol or drug use of close relatives in the United Kingdom.

Measurements

A 75-item self-completion Alcohol, Drugs and the Family Social Support Scale (ADF SSS) was developed from interview data, and piloted with 10 family members. The resultant 58-item measure was subjected to psychometric testing with 132 family

members, alongside qualitative feedback from 110. This led to a refined 25-item questionnaire whose psychometric properties are described in this paper.

Findings

Preliminary findings on the 25-item questionnaire indicate satisfactory levels of internal consistency for the overall measure (α=0.812) and each of the three constituent subscales: frequency of positively perceived general (α=0.913) and ADF specific (α=0.727) functional support and frequency of negatively perceived ADF-related (α=0.851) functional support. Qualitative information from family members revealed that the measure was experientially applicable to them.

Conclusions

The significance of a new social support measure is discussed, with implications for research, theory and practice in the field.

ALCOHOL, DRUGS AND THE FAMILY

The alcohol and drug problems of individuals also affect their families. Around 40% of first calls to alcohol advice centres come not from the drinker, but from their family or friends (Stafford, 1997). Similar percentages also apply for problem drug use (Velleman & Templeton, 2002). Living with a relative who uses alcohol or illicit drugs excessively causes great strain on the family, with members suffering many negative experiences, including violence, poverty and social isolation, and major disruption to the family's way of life, their roles, routines, finances, communication systems, etc. (Orford, Velleman *et al*., 2010; Velleman, 2004).

Problems experienced by family members include physical and psychological morbidity, including anxiety, depression and psychosomatic complaints (Laslett *et al*., 2010; Velleman & Orford, 1999), frequently leading to increased attendance at primary care services (Ray *et al.*, 2007). Further, family members may not know how best to cope with either the overt problem or with the complex situations that inevitably develop as a result (Orford, Velleman *et al*., 2010). In the United Kingdom, it is estimated that serious alcohol problems double the risk of divorce/separation; alcohol is a factor in 40% of domestic violence incidents; and problem substance use is a contributory factor in 62% of known child abuse cases (Forrester & Harwin, 2011). Over the past 30 years these effects have been well documented (Dorn *et al.*, 1987; Hurcom *et al*., 2000; Kroll & Taylor, 2003; Orford & Harwin, 1982) and the phenomenon appears to be universal (Orford, Natera *et al*., 1998a, 1998b, 2005; Orford, Velleman *et al*., 2010; Taylor *et al*., 2008; Velleman & Templeton, 2003).

Researching the impact of alcohol and drug problems on family members is important for a number of reasons. First, alcohol and drug problems are highly prevalent, and around eight million family members in the UK are believed to be negatively affected by the problem alcohol or drug use of a relative (Copello *et al*., 2010; Velleman & Templeton, 2003, 2007). Second, many of these families exhibit symptoms of strain which merit help in their own right (Orford, Copello *et al*, 2010). Third, involvement of family members in interventions with their problem substance using relatives can enhance positive outcomes (Velleman, 2006).

Numerous theoretical models have been suggested to understand the experiences of families facing the substance-related problems of a loved one (Velleman *et al*., 1998). A key influence on theories is how symptoms of distress in family members are interpreted, and whether these symptoms are seen as part of individual or family 'pathology', or as a result of exposure to severe and long lasting stress (Copello, 2003). The Stress-Strain-Coping-Support (SSCS) model is non-pathologising; understanding family members' symptoms as a result of the stressful circumstances of living with their problem alcohol or drug using relative. The SSCS model (Orford, 1998; Orford, Copello *et al*., 2010; Orford, Natera *et al*., 2005; Velleman and Templeton, 2003; Velleman *et al*., 2008) suggests that stress and strain, which together describe the impact of the problem drinking or drug use on other family members, are mediated by the positive or negative influence of the method(s) of coping used and the extent and quality their of social support.

The development of the SSCS model was based on extensive international qualitative research (e.g. Ahuja *et al*., 2003; Arcidiacono *et al*., 2009; Orford, Natera

et al., 1998a, 1998b, 2005; Orford *et al*., 2001; Orford, Velleman *et al*., 2010). In addition, quantitative methods to assess three of the elements comprising the SSCS model, *stress*, *strain* and *coping*, have been developed and validated. These measures are the Family Member Impact Scale (FMI) (Orford, Templeton *et al*., 2005, 2010), the Symptom Rating Test (SRT) (Kellner & Sheffield, 1973) and the Coping Questionnaire (CQ) (Orford *et al*., 1975). However, there is no accepted quantitative measure of the fourth element, *social support*. This paper describes the design and preliminary psychometric testing of such a measure.

SOCIAL SUPPORT

There are various ways of understanding social support. One is to conceptualise social support as the frequency of contact with others; the resources that people perceive as available or that are actually provided; and the perceived adequacy of that support from both formal and informal sources (Cohen *et al*., 2000; Hooyman & Kiyak, 2011). Specifically, it includes a process involving the provision or exchange of tangible or intangible resources in response to the perception that others are in need of such assistance.

Two central questions arise in relation to ADF specific social support: what social support do family members ideally need in coping with their stressful circumstances and what social support do they actually receive? (Orford, Natera *et al*., 1998a). Orford and colleagues (2005) explored the social support experience for family members focusing on what they described as helpful and effective. Consistent with general functional support categories reported in the literature, four main dimensions were identified: emotional; informational; social companionship and instrumental

support. In addition, two further dimensions relating specifically to ADF social support were identified: support for coping (e.g. awareness of alternatives, non-judgemental approach) and attitudes and actions towards the problem substance using relative.

These salient ADF social support dimensions highlight the particular attitudes and actions of other people that family members found supportive. They have special significance when one understands the nature of the stressors family members are typically under, and the coping dilemmas they face (Orford & Dalton, 2005). Although it is possible to distinguish operationally between the four general functional support dimensions, they are conceptually, logically and empirically interrelated. Additionally, the ADF specific functional dimensions overlap with general forms of social support. The dimensions outlined were utilised to operationalise the concept of social support for family members.

STUDY AIMS

Although there are many general questionnaires available to assess social support, there is a requirement for an instrument to capture ADF specific items for the four perceived general functional support categories and the two ADF specific dimensions.

We aimed to design and develop the ADF Social Support Scale (ADF SSS), an instrument suitable for self-completion by family members of problem alcohol or drug users focusing on the perceived availability of functional support, as well as perceptions of the quality and adequacy of support.

METHOD

Design

A mixed methodological approach (Caracelli & Green, 1993) was utilised in both initial piloting and testing of the revised measure. Qualitative and quantitative methods corroborated and complemented each other to establish the main determinants of social support specific to family members; facilitating production of pilot, test and refined versions of the ADF SSS.

Ethical approval was obtained from the South West Local Research Ethics Committee (SWLREC) and the local NHS Trust Clinical Governance Committee.

Measure development

A pool of items for inclusion within the new questionnaire was identified from existing ADF qualitative information, resulting in an initial 75-item questionnaire. This was piloted producing a 58-item questionnaire which was extensively tested. Analysis of this 58-item measure resulted in production of a 25-item questionnaire with promising psychometric properties (see Figure 1).

---------- Figure 1 about here ----------

Development of the 75-item measure

Reports of 200 interviews with family members of problem substance users were analysed, identifying potential items for the social support measure. These reports came from previous studies undertaken by the ADF research group (Orford, Natera;

et al., 1998a, 1998b, 2005; Copello *et al.*, 2000, 2009) which included interviews with family members from a range of cultural and socio-demographic backgrounds. Items developed from these interview reports were augmented and triangulated with a thorough review of both the general and ADF-related social support literature, including appraising existing social support interview schedules and questionnaires.

This led to a 75-item pilot version of the ADF SSS. The 75 items covered the six functional support dimensions described previously. Response categories were presented in a four-point Likert partition scale relating to the last three months. For each item, questions were asked about actual frequency, ideal frequency (for both, response categories labelled: never, once or twice, sometimes, often), importance (n/a, not important, important, very important) and satisfaction (n/a, dissatisfied, neither satisfied nor dissatisfied, satisfied). The item order was determined using a random number table, so that subsequent item influence or bias was reduced. Target completion time was 20-30 minutes. Socio-demographic information was collected by a question sheet appended to the pilot ADF SSS (for further details see Toner, 2009).

Piloting the measure and reducing it to 58-items

The 75-item measure was piloted, with qualitative feedback being received from 10 family members and three practitioners. The 10 family members were all attending one of three drug and alcohol services in England and Wales (Bristol, Wigan and Cardiff). The lead practitioners from each of these agencies provided qualitative feedback on the usability of the measure.

Inclusion criteria for family members were that they were over 16 years old, functionally literate in English and not impaired in a way which would prohibit completing questionnaires. Family members who themselves had current serious substance use or mental health problems, or who were experiencing a crisis were excluded.

Both qualitative and quantitative information from the pilot study were analysed with the purpose of refining the ADF SSS. Reasons for item removal included: poor completion rate; omitted, erroneous, incomplete, inappropriate, inconsistent or n/a responses; poor distribution of item scores and item repetitions. Items which caused difficulties were re-phrased, without altering meaning. The various data sources were collated to enable the production of a 58-item version of the ADF SSS which was subjected to a wider and more in-depth mixed methods analysis.

The 58-item version

The 58-item ADF SSS comprised six pages with a guide completion time of 15-20 minutes. Response categories and questions remained consistent with the pilot version. Socio-demographic information was gathered and questions were included on general social support and specific sources of support available to family members (i.e. friends, family, professionals, self-help groups).

Testing the 58-item version

All alcohol and drug agencies in England and Wales offering a service to family members (Williams, 2004) were approached to participate in testing this 58-item questionnaire. Additional statutory and non-statutory alcohol and drug agencies and

self-help groups were included through contact via conferences, colleagues and the internet. Overall, 40 services were approached, with 98% agreeing to participate and 68% returning completed questionnaires.

Two quantitative sub-samples were also recruited: one for test-retest purposes, the other for a validity check, where family members completed both the ADF SSS and the Significant Others Scale (SOS) (Power *et al*., 1988). For the test-retest version of the ADF SSS, family members were requested to complete two questionnaires, with a gap of two to four hours between each. This timeframe was selected as short enough to ensure that any changes in participants' responses were not due to changes in their circumstances and long enough to minimise practice and recall effects. Completed measures were cross-referenced using an anonymous coding system for identification.

The SOS was used to assess the construct validity of the ADF SSS, due to its favourable psychometric properties, and previous successful self-completion among family members and other populations under chronic stress. It assesses the level and quality of perceived emotional and practical functional support provided by up to seven key individuals. Family members were requested to complete both the ADF SSS and the SOS, and to post them back together in the same envelope. In total 80 copies of the SOS were distributed, and 29 family members (36%) completed both the ADF SSS and SOS.

Qualitative data were also collected via interview from a sub-sample of 110 family members. An information sheet was provided assuring data protection and

anonymity, and signed consent gained to record the semi-structured cognitive interviews. The researcher sat with family members (one-to-one and group settings) as they completed the measure and talked through their thoughts and issues whilst working through the questionnaire. Concerns over whether the items were comprehensible, salient and suggested improvements were discussed with each respondent. Practitioners also provided qualitative feedback on the applicability of the measure.

All data were entered or transcribed, checked and cleaned on appropriate software programmes before analysis.

Test Sample

Two distinct groups of participants were purposively sampled for the main study: family members of problem alcohol and drug users and practitioners who work therapeutically with family members.

Family Members

From the 465 measures circulated to agencies, 132 family members (28%) completed the 58-item ADF SSS. These individuals were predominately white, female, middle-aged, and well educated. However, a wide variety of relationships between family members and their relatives were represented. Table 1 outlines the socio-demographic details of the family members in the total sample.

---------- Table 1 about here ----------

The two further sub-samples described above were derived from the total family member sample: 18 family members (14%) completed the test-retest sub-study and 29 (22%) completed the SOS. In terms of qualitative work, 110 family members with similar socio-demographic characteristics to the quantitative sample provided interpretative feedback on the measure.

Practitioners

Interpretative comments were given on the measure by 50 practitioners from the 27 agencies which returned questionnaires.

Quantitative analysis

Factor Structure

A principal components analysis (PCA) with direct oblimin rotation and kaiser normalisation was used to determine the factor structure of the 58-item ADF SSS (Kline, 1994). Parallel analysis (Lattin *et al*., 2003) was also applied to strengthen the validity of the factor structure derived from the PCA. The resultant factor scales were labelled in accordance with the data output, the theoretical conceptualisation of social support within the SSCS model, and the literature review undertaken on social support.

An item analysis was conducted on the test ADF SSS to eliminate weak loading items. Cronbach's alpha reliability coefficients were calculated to test the internal reliability of the ADF SSS and composite subscales, derived from the PCA. Item-to-total correlations and ADF SSS total scale scores were explored to assess the internal consistency of the measure. The Cohen Kappa equation (Cohen, 1960) of

sequential analysis was performed on 14% of the sample who completed the ADF SSS twice. Correlation coefficients were examined to establish the test-retest reliability of the measure.

Construct Validity

The SOS (Power *et al*., 1988) was administered to a 22% sub-set of family members to assess the construct validity of the ADF SSS. Correlation coefficients, means, standard deviations and distribution of scores were calculated.

Statistical Tests

Quantitative data from completed questionnaires were treated as ordinal. Missing data were accounted for by mean item substitution; with items with over 15% of missing responses discarded. Frequencies and distributions were calculated to explore the relationship between socio-demographic characteristics and ADF SSS scores. Pearson product-moment correlation coefficient (*r*) was used to correlate family members' self-reported extent and quality of social support and ADF SSS subscale and total scores (two-tailed results are reported). All statistical tests were conducted using SPSS.

Qualitative Analysis

To assess content validity 110 family members and 50 practitioners provided perspectives on the content and process of completing the measure. A thematic approach (Braun & Clarke, 2006) was utilised to analyse interpretative comments. All qualitative data analyses were completed using QSR NVivo.

FINDINGS

Although the pilot and the initial 58-item test versions of the ADF SSS examined four aspects for each of the social support items in the questionnaire (actual frequency, ideal frequency, importance, satisfaction) and also the resulting discrepancy scores between ideal and actual frequency, the 25-item questionnaire which emerged from mixed methods analysis of the test ADF SSS only examined actual frequency. This kept the questionnaire relatively short, consistent with other ADF quantitative measures, and maintained simplicity which is important with a self-completion questionnaire. Unfortunately, family members had difficulty following the instructions on completing questions relating to importance and satisfaction for each item. There were also significant amounts of missing quantitative data for the ideal questions, and the qualitative data showed a high proportion of family members reported difficulty and confusion over answering these questions. The frequency scale performed best psychometrically and family members reported ease in completing it. Accordingly, only the frequency question was retained for each item for the refined ADF SSS, and will be presented in this paper.

Analysis of the 58-item measure to produce a 25-item questionnaire

Reliability analyses of the 58-item ADF SSS included internal reliability (PCA and item analysis) and test-retest reliability (correlation coefficients and kappa values). Validity analyses included content validity (Pearson's scale and subscale correlations, interviews and correspondence from family members and practitioners) and construct validity (correlations with SOS, general social support and sources questions).

Principal Components Analysis of the 58-item ADF SSS Frequency Scale

A PCA with direct oblimin rotation was performed on the 58-item test version of the ADF SSS (n=132). An oblique rotation method was used because conceptually there may be shared variance between factors relating to social support (Kline, 1994).

The PCA and the scree plot suggested three factors with eigen values greater than 2.5 (factor 1=10.5; factor 2=6.2; factor 3=2.6), which together explained 33.2% of the total variance. Eigen values for the rotated factors were 9.7, 6.8 and 4.2 respectively. The factor matrix showed that 28 items on the frequency scale loaded at >0.3 on the first factor, 17 items loaded at >0.3 on the second factor and 6 items loaded at >0.3 on the third factor. Seven items failed to load substantially on any of the three factors and were discarded.

Internal Consistency of the 58-item ADF SSS Frequency Scale

Cronbach's coefficient alpha was used to assess internal consistency of the frequency scales, providing an assessment of how well items relate to each other and to the total. The test results range from 0 to 1.0, with acceptable levels from 0.65-0.7, and 0.7 or above indicative of a good level of internal consistency (Cortina, 1993).

Reducing to 25 Items

Items were discarded from each subscale if they showed a lack of distribution or did not correlate significantly (<0.3) with the total. From the PCA, 17 items were removed from the subscale comprising factor 1, leaving 11 items with a Cronbach's alpha of 0.913. Internal reliability item-to-total correlation estimates for this revised

factor 1 of the ADF SSS frequency scale are presented in Table 2, together with the consequence for alpha of removing each scale item. The factors are labelled to provide the best interpretation of the included items.

----------Table 2 about here ----------

Table 2 shows that the item-to-total correlations for refined factor 1 (11 items) of the ADF SSS frequency scale were found to be greater than 0.53 and, if any of the remaining scale items were to be omitted, the alpha value would be lower.

With the subscale comprising factor 2, 9 items were removed, leaving 8 items. The alpha value for the refined factor 2 was 0.851. The item-to-total correlations were all above 0.48 and removal of any of the scale items reduced the alpha coefficient.

No items were removed from factor 3, as removal reduced the robustness of the scale. Nevertheless, the factor 3 frequency subscale should be treated with caution, as the scale items have lower correlations with the total (starting at 0.3), than factors 1 and 2.

The 25-item ADF SSS

The 25-item ADF SSS achieved good levels of internal consistency, with Cronbach's alpha for the overall 25 item scale being 0.812. The figures for the three ADF SSS frequency subscales are shown in Table 3: *frequency of positively perceived functional support* (subscale 1), *frequency of negatively perceived ADF-related support* (subscale 2) and *frequency of positively perceived ADF specific support*

(subscale 3). Table 3 also provides more descriptive detail on these three subscales, which resulted from both the Principal Components and item analyses performed on the 58-item version of the ADF SSS.

---------- Table 3 about here ----------

The refined ADF SSS also obtained satisfactory levels of test-retest reliability, with an overall frequency scale correlation coefficient of 0.970, and values of 0.934, 0.894 and 0.891 respectively for the three frequency subscales. The items comprising each frequency subscale produced reasonable kappa values (from 0.385 to 0.749 for subscale 1; 0.402 to 0.806 for subscale 2 and 0.390 to 0.727 for subscale 3).

In examining the content validity, the frequency scale score for the 25-item ADF SSS correlated significantly with the larger 58-item version at 0.888 ($p<0.01$), and the frequency subscale scores correlated significantly with the total frequency score (0.842 for frequency of positively perceived functional support, -0.336 for frequency of negatively perceived ADF support (items are reverse scored for this scale) and 0.536 for frequency of positively perceived ADF support).

The SOS questionnaire was utilised as a measure of construct validity for the ADF SSS. The 25-item ADF SSS frequency scale total score correlated significantly with the SOS emotional scale (0.394, $p<0.05$), and frequency of positively perceived functional support registered correlations with the SOS emotional (0.503, $p<0.01$) and practical (0.385, $p<0.05$) scales and with both respective SOS discrepancy scores (0.417, $p<0.05$; 0.384, $p<0.05$). Refined ADF SSS frequency total score also

correlated with general (0.349, p<0.01) and structural (0.273, p<0.01) support questions contained within the test version of the ADF SSS.

Qualitative data were fed into the validity checks to ensure that the items retained in the refined instrument captured experiential social support phenomena for the family members. Qualitative information from family members identified further issues with rejected items. Problems with this set of items were much more pronounced than for retained items. Further qualitative exploration on the retained items assisted fine tuning of wording and confirmed that the content was applicable to family members (see Appendix 1 for refined ADF SSS; scoring system is available from corresponding author). This supplemented the quantitative findings indicating that the refined ADF SSS was psychometrically sound.

DISCUSSION

Social support is a key area within the SSCS model which hitherto has not been assessed quantitatively. The aim of the present study was to operationalise social support for family members and develop a psychometrically sound self-completion measure. This paper has described the development and initial testing of a concise, self-completion questionnaire with promising psychometric properties.

From a theoretical perspective, the development of this questionnaire further clarified the social support elements salient for family members. Functional social support refers to the type, quantity and quality of assistance available or actually provided by interpersonal relationships (Glazer, 2006). Pertinently, it is the *perceived* availability

of functional support that is an important determinant of stress mediation and well-being (Pinkerton & Dolan, 2007).

The first theoretical construct to emerge from both PCA and item analysis procedures was that of *positively perceived functional support*, which comprised the construct elements of emotional and instrumental support, social companionship and support for coping. The second factor label, *negatively perceived ADF-related functional support*, included support for coping and attitudes and actions towards the using relative. The third factor, *positively perceived ADF specific functional support*, contained the functional dimensions of support for coping; attitudes and actions towards the using relative; formal and informal informational and emotional support. It is important to note that, as with the other more general dimensions of functional support processes, ADF-related aspects can be perceived both positively and negatively by family members.

Only three constructs emerged from the PCA, not the six dimensions suggested from the literature review. This mirrors previous findings highlighting the complexity of categorising the social support domain. Further, it may support the contention by Sarason and colleagues (1994) that functional dimensions within social support are often couched in idiosyncratic labels and are difficult to delineate, compare or integrate. However, this is not a major issue as perceived functional dimensions are not mutually exclusive but influence each other (Glazer, 2006).

Many researchers consider perceived functional dimensions to capture the true nature and meaning of social support and that subjective measures of potential

assistance are more strongly related to stress amelioration and health outcomes (Chronister *et al*., 2006; Kim & McKenry, 1998). Nevertheless, the current three component typology needs to be further investigated by performing a confirmatory factor analysis on the 25-item ADF SSS with a much larger sample.

Given the social support insights from this study, a fuller picture is now available to re-appraise the social support component of the SSCS model and thus provide descriptive detail and exemplar material on this central tenet of the model. Having the level and quality of ADF social support operationalised means that a powerful factor with the potential both to mitigate the effects of stress on health and mediate coping strategies can be assessed further. Therefore the SSCS model can be enhanced with a complete set of quantitative measures.

Provided larger scale psychometric testing of the 25-item ADF SSS is conducted, research data relating to the model can be triangulated with both qualitative and quantitative information. Sophisticated statistical modelling techniques can be utilised to perform tests of mediation and moderation on the main elements of the SSCS model. Equipped with this information it will be possible to further explore the relationship between particular dimensions of social support and coping styles, the dynamics between family stress and social support, and the interaction between social support and physical and psychological symptomatology.

These research findings could further inform the evidence-based 5-Step intervention which provides support for family members and corresponds to the main concepts of the SSCS perspective (Copello *et al*., 2009). Considerable research has assessed

the effectiveness of the 5-Step Intervention (e.g. Copello *et al.*, 2009; Templeton *et al.*, 2007; Velleman *et al.*, 2011), but such evaluations have been hindered by not having an appropriate measure of ADF-related social support. Now there are instruments available for all major components of the intervention, the four main factors can potentially be examined. As there is a serious gap in service provision for the large numbers of family members in the UK, further evidence demonstrating the effectiveness of the 5-Step approach would extend the argument for implementing this brief intervention in primary and secondary care settings.

Some limitations to this study would need to be addressed in future work. The study sample was UK focused and predominantly white British. Nonetheless, the qualitative data utilised to construct the questionnaire items were drawn from three different socio-cultural groups (Mexico City, South West England and Northern Australia). Accounts in the data have been compared and contrasted using the principles of grounded theory (Strauss & Corbin, 1998), suggesting a core experience shared by family members throughout the world (Orford, Natera *et al.*, 2005). However, the 25-item ADF SSS will need to be administered to different ethnic groups within the UK and tested with different cultural groups internationally to achieve generalisability.

The study participants were also predominantly female. Although this mirrors previous research in this area, increasing male participation is of major concern. Adopting a theoretical sampling approach (Strauss and Corbin, 1998; Willig, 2001) can ensure that males are represented more significantly. Nevertheless, the current research did achieve a good spread of relationships (i.e. partners, parents and

siblings) and thus was generalisable to the spectrum of relations. Also, sampling was wide in terms of including agencies with different approaches towards intervening with family members.

The decision to omit the importance, satisfaction and ideal questions on the 25-item ADF SSS was taken for the reasons outlined in the findings section. However, these remain theoretically important areas and a possibility for the future might be that the three scales are re-introduced on a practitioner-assisted measure.

The study utilised postal questionnaires. Research participants may be motivated to complete a questionnaire for different reasons such as a desire to help others or because they feel pressurised to do so. All of these introduce potential biases into the recruitment and data collection process (Boynton & Greenhalgh, 2004). Response rates are usually low and around 40% completion rate is not uncommon. Poor response rates are a likely source of bias, as non-respondents tend to differ from respondents in systematic ways (Peterson, 2000). For instance, Taylor and Lynn (1998) found item non-response rates to be higher for males, less well educated and lower social classes. Concomitantly, in the current study completion rates of the ADF SSS for older respondents were lower than that of their younger counterparts.

The postal nature of the study also had ramifications for the test-retest component. Specifying the duration between administrations of the measure proved problematic. Given the recruitment difficulties, it was prudent not to leave too much time between administrations, as attrition rate may have been higher. Questionnaire items were

randomly assigned within the ADF SSS to protect against order effects. Notwithstanding this, having time to think between administrations may explain some score variability. Instructions indicated two to four hours between completing the two measures, but using a postal questionnaire meant that there was no control over this time interval.

A further limitation involves the SOS. This measure was selected to demonstrate construct validity for the current study. However, correlations were not highly significant possibly because the SOS addressed only general support and the perceived functional support dimensions were assessed through sources which are prone to measurement errors on self-completion instruments (Peterson, 2000). Additionally, a sub-sample size of 29 was not large enough to establish the full extent of the relationship between the SOS and the ADF SSS.

CONCLUSION

There are several areas for further research. Further validation of the 25-item ADF SSS is required. Although a sample size of 132 was adequate for the initial testing of the ADF SSS, larger, more diverse samples are needed to confirm its psychometric properties. Particularly important would be to establish the measure's utility and generalisability within different age, socio-cultural, ethnic and gender groups. Also, the test-retest sample of 18 family members should be substantially increased with a longer duration (at least two days) between administrations. Within the limits of the cross-sectional data, the ADF SSS appears to be an instrument capable of capturing the psychological reality of how family members experience social support. However,

further longitudinal work is required to help determine the nature of social support for families at various points in transition.

Further, larger scale studies including other self-completion social support measures administered alongside the ADF SSS would allow scoring norms and construct validity to be established. Therefore, the utility of existing social support instruments needs to be evaluated. A strategy for addressing contextual measurement issues and fine tuning may lie in applying mixed methodological research designs. Questionnaire development is a dynamic process and needs to respond not only to new discoveries in the field but also to changes in psychosocial conditions (Peterson, 2000).

In conclusion, the ADF SSS differs from existing social support questionnaires in that it deals with the particular support dynamics involved when a family member has to live with the problem drinking or drug taking of a close relative. The refined version of the ADF SSS is a simple, brief, self-completion measure.

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DECLARATION OF INTEREST

The authors report no conflicts of interest.

REFERENCES

Ahuja, A., Orford, J., & Copello, A. (2003). Understanding how families cope with alcohol problems in the UK West Midlands Sikh community. *Contemporary Drug Problems*, 30, 839–873.

Arcidiacono, C., Velleman, R., Procentese, F., et al. (2009). Impact and coping in Italian families of drug and alcohol users. *Qualitative Research in Psychology, 6*(4), 260-280.

Boynton, P.M., & Greenhalgh, T. (1994). Hands-on guide to questionnaire research: Selecting, designing, and developing your questionnaire. *British Medical Journal,* 328, 1312-1315.

Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Caracelli, V.J., & Greene, J.C. (1993). Data Analysis Strategies for Mixed-Method Evaluation Designs. *Educational Evaluation and Policy Analysis, 15*(2), 195-207.

Chronister, J., Johnson, E., & Berven, N. (2006). Measuring social support in rehabilitation. *Disability & Rehabilitation,* 28, 75-84.

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational & Psychological Measurement,* 20, 37-46.

Cohen, S., Underwood, L., & Gottlieb, B. (2000). *Social support measurement and intervention.* New York: Oxford University Press.

Copello, A. (2003). *Responding to addiction in the family: natural and assisted change in coping behaviour.* Unpublished PhD Thesis. University of Birmingham.

Copello, A., Templeton, L., Krishnan, M., et al. (2000). A treatment package to improve primary care services for relatives of people with alcohol and drug problems. *Addiction Research & Theory*, *8* (5), 471-484.

Copello, A., Templeton, L., Orford, J., et al. (2009). The relative efficacy of two levels of a primary care intervention for family members affected by the addiction problem of a close relative: a randomized trial. *Addiction, 104*(1), 49-58.

Copello, A., Templeton, L., & Powell, J. (2010). The impact of addiction on the family: Estimates of prevalence and costs. *Drugs: Education, Prevention & Policy,* 17, 63-74.

Cortina, J.M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology,* 78, 98-104.

Dorn, N., Ribbens-McCarthy, J., & South, N. (1987). *Coping with a nightmare: Family feelings about long term drug use*. London: Institute for the Study of Drug Dependence.

Forrester, D., & Harwin, J. (2011). *Parents who misuse drugs and alcohol: Effective interventions in social work and child protection*. Oxford: Wiley-Blackwell.

Glazer, S. (2006). Social support across cultures. *International Journal of Intercultural Relations,* 30, 605-622.

Hooyman, N.R., & Kiyak, H.A. (2011). *Social gerontology: A multidisciplinary perspective* (9th Edn.). Boston: Allyn & Bacon.

Hurcom, C.A., Copello, A., & Orford, J. (2000). The family and alcohol: Effects of excessive drinking and conceptualisation of spouses over recent decades. *Journal of Substance Use and Misuse, 35*(4), 473-502.

Kellner, R., & Sheffield, B.F. (1973). A self rating scale of distress. *Psychological Medicine,* 3, 88-100.

Kim, H.K., & McKenry, P.C. (1998). Social networks and support: A comparison of African Americans, Asian Americans, Caucasians, and Hispanics. *Journal of Comparative Family Studies,* 29, 313-334.

Kline, P. (1994). *An Easy Guide to Factor Analysis*. London: Routledge.

Kroll, B., & Taylor, A. (2003). *Parental Substance Misuse and Child Welfare.* London: Jessica Kingsley Publishers.

Laslett, A.M., Catalano, P., Chikritzhs, Y., et al. (2010). The Range and Magnitude of Alcohol's Harm to Others. Victoria: Turning Point Alcohol and Drug Centre.

Lattin, J., Carroll, J.D., & Green, P.E. (2003). *Analyzing multivariate data*. Pacific Grove, CA: Brooks/Cole-Thomson Learning.

Orford, J. (1998). The coping perspective. In R. Velleman, A. Copello & J. Maslin (Eds.), *Living with drink: Women who live with problem drinkers*. London: Longman.

Orford, J., Copello, A., Velleman, R., & Templeton, L. (2010). Family members affected by a close relative's addiction: The stress-strain-coping-support model. *Drugs: education, prevention and policy, 17*(S1): 36–43.

Orford, J., Guthrie, S., Nicholls, P., et al. (1975). Self-reported coping behaviour of wives of alcoholics and its association with drinking outcome. *Journal of Studies on Alcohol,* 36, 1254-1267.

Orford, J., & Harwin, J. (1982). *Alcohol and the Family*. London: Croom Helm.

Orford, J., Natera, G., Copello, A., et al. (2005). *Coping with Alcohol and Drug Problems: The Experiences of Family Members in Three Contrasting Cultures*. London: Brunner-Routledge.

Orford, J., Natera, G., Davies, J., et al. (1998a). Social support in coping with alcohol and drug problems at home: findings from Mexican and English families. *Addiction Research & Theory,* 6(5), 395-420.

Orford, J., Natera, G., Davies, J., et al. (1998b). Stresses and strains for family members living with drinking or drug problems in England and Mexico. *Salud Mental, 21*(1), 1-13.

Orford, J., Natera, G., Velleman, R. et al. (2001). Ways of coping and the health of relatives facing drug and alcohol problems in Mexico and England. *Addiction, 96*(5), 761-774.

Orford, J., & Dalton, S. (2005). A four-year follow-up of close family members of Birmingham untreated heavy drinkers. *Addiction Research & Theory, 13*(2), 155-170.

Orford, J., Templeton, L., Velleman, R., et al. (2005). Family members of relatives with alcohol, drug and gambling problems: a set of standardized questionnaires for assessing stress, coping and strain. *Addiction, 100*(11), 1611-1624.

Orford, J., Templeton, L., Velleman, R. et al. (2010). Methods of assessment for affected family members. *Drugs: Education, Prevention and Policy, 17*(S1), 75-85.

Orford, J., Velleman, R., Copello, A., et al. (2010). The experiences of affected family members: A summary of two decades of qualitative research. *Drugs: Education, Prevention & Policy, 17*(S1), 44-62.

Peterson, R.A. (2000). *Constructing Effective Questionnaires*. Thousand Oaks, CA: Sage.

Pinkerton, J., & Dolan, P. (2007). Family support, social capital, resilience and adolescent coping. *Child & Family Social Work, 12*(3), 219-228.

Power, M.J., Champion, L.A., & Aris, S.J. (1988). The development of a measure of social support: the Significant Others Scale (SOS). *British Journal of Clinical Psychology,* 27, 349-358.

Ray, G., Mertens, J., & Wiesner, C. (2007). The excess medical cost and health problems of family members of persons diagnosed with alcohol or drug problems. *Medical Care,* 45, 116–22.

Sarason, I.G., Sarason, B.R., & Pierce, G.R. (1994). Social Support: Global and Relationship-Based Levels of Analysis. *Journal of Social and Personal Relationships, 11*(2), 295-312.

Stafford, D. (1997). *Children of alcoholics. Understanding the effects of a parent's drinking on your life and finding ways to heal the hurt* (2nd Edn.). London: Piatkus.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research*. Thousands Oaks, CA: Sage Publications.

Taylor, A., Toner, P., Templeton, L., & Velleman, R. (2008). Parental alcohol misuse in complex families: The implications for engagement. *British Journal of Social Work*, *38(*5), 843-864.

Taylor, S., & Lynn, P. (1998). The effect of a preliminary notification letter on response to a postal survey of young people. *Journal of the Market Research Society, 40*(2), 165-173.

Templeton, L., Zohhadi, S., & Velleman, R. (2007). Working with Family Members in Specialist Drug and Alcohol Services: Findings from a Feasibility Study. *Drugs: Education, Prevention and Policy,* 14(2), 137-150.

Toner, P. (2009). *The development of a social support measure for the family members of problem substance users*. Unpublished PhD thesis. University of Bath.

Velleman, R. (2004). Alcohol and drug problems in parents: An overview of the impact on children and implications for practice. In M. Göpfert, J. Webster & M. Seeman (Eds.), *Parental Psychiatric Disorder: Distressed Parents and their Families* (2nd Edn. pp. 185-202). Cambridge University Press.

Velleman, R. (2006). The importance of family members in helping problem drinkers achieve their chosen goal. *Addiction Research & Theory, 14*(1), 73-85.

Velleman, R., Copello, A., & Maslin, J. (1998). *Living with Drink: Women Who Live with Problem Drinkers*. London: Longman.

Velleman, R., & Orford, J. (1999) *Risk and Resilience: Adults Who Were the Children of Problem Drinkers*. London: Harwood Academic.

Velleman, R., Orford, J., Templeton, L., et al. (2011). 12-Month follow-up after brief interventions in primary care for family members affected by the substance misuse problem of a close relative. *Addiction Research & Theory, 19*(4), 362-374.

Velleman, R., & Templeton, L. (2003). Alcohol, Drugs and the Family: Results from a long running research programme within the UK. *European Addiction Research,* 9, 103-112.

Velleman, R., & Templeton, L. (2002). Family Interventions in Substance Misuse. In T. Petersen & A. McBride (Eds.), *Working with Substance Misusers* (pp. 145-153). London: Routledge.

Velleman, R., & Templeton, L. (2007). Understanding and modifying the impact of parents' substance misuse on children. *Advances in Psychiatric Treatment,* 13, 79-89.

Williams, B. (2004). *Review of projects and initiatives that support children and families affected by alcohol misuse*. London: Alcohol Concern.

Willig, C. (2001). *Introducing Qualitative Research in Psychology*. Buckingham: Open University Press.

Figure 1: Measure Development

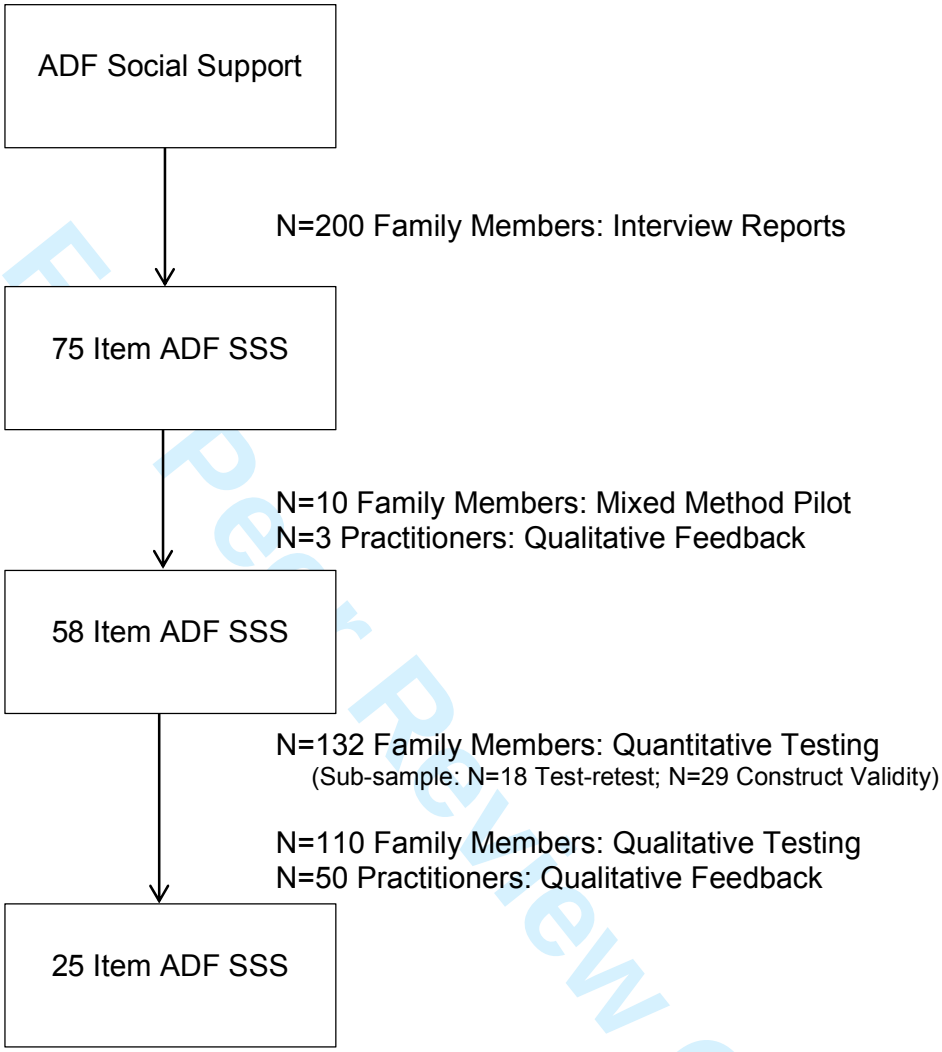

Table 1: Socio-demographic information on the total family member sample.

	Frequency	Percentage
Sex		
Male	**25**	**19.8%**
Female	**101**	**80.2%**
Missing	6	
Age		
16-24	**3**	**2.3%**
25-35	**19**	**14.7%**
36-49	**40**	**31%**
50-64	**55**	**42.6%**
65+	**12**	**9.3%**
Missing	3	
Ethnic Origin		
White	**125**	**97.7%**
Chinese	**1**	**0.8%**
Hispanic	**1**	**0.8%**
Other: not stated	**1**	**0.8%**
Missing	4	
Activity		
Employed	**67**	**52%**
Volunteer	**4**	**3%**
Housework	**21**	**16%**
Student	**7**	**5%**
Retired	**22**	**17%**
Unable to work	**3**	**2%**
Seeking work	**4**	**3%**
Unemployed	**1**	**0.8%**
Missing	3	

Higher Education		
Yes	**78**	**62%**
No	**48**	**38%**
Missing	6	
Family Member		
Husband/Male partner	**12**	**9.5%**
Wife/Female partner	**41**	**32.5%**
Son	**3**	**2.4%**
Daughter	**11**	**8.7%**
Father	**8**	**6.3%**
Mother	**39**	**31%**
Brother	**1**	**0.8%**
Sister	**5**	**4%**
Other family member (e.g. aunt, graddaughter, wife/mother/sister)	**6**	**4.8%**
Missing	6	
Using Relative		
Husband/Male partner	**42**	**32.5%**
Wife/Female Partner	**12**	**9.3%**
Son	**31**	**24%**
Daughter	**14**	**10.9%**
Father	**5**	**3.9%**
Mother	**9**	**7%**
Brother	**4**	**3.1%**
Sister	**1**	**0.8%**
Other relative (e.g. niece, grandfather, husband/son/daughter/bother/sister)	**11**	**8.5%**
Missing	3	
Recently Residing with Family Member		
Yes	**80**	**63%**
No	**47**	**37%**
Missing	5	

Table 2: Final item analysis of the three factors from the ADF SSS frequency scale.

ADF SSS Items	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Factor 1 - Positive Functional Support		
1	.571	.910
2	.664	.905
7	.641	.906
9	.773	.900
11	.685	.904
12	.586	.910
13	.534	.912
26	.681	.904
52	.766	.899
54	.676	.904
55	.783	.899
Factor 2 - Negative ADF Specific Support		
15	.568	.836
25	.634	.828
27	.568	.838
31	.641	.827
32	.542	.840
34	.484	.845
47	.650	.828
57	.674	.823
Factor 3 - Positive ADF Specific Support		
3	.500	.677
33	.598	.644
48	.300	.734
50	.360	.715
51	.395	.707
58	.615	.638

Table 3: The factors and items comprising the 25-item ADF SSS.

Factor Labels	ADF SSS Items	Cronbach's Alpha
Positive Functional Support (Emotional and instrumental support, social companionship and support for coping).	1 Friends/relations have **understood what it is like for me to live with my relative's drinking or drug taking**. 2 Friends/relations have **helped to cheer me up**. 7 I have friends/relations **whom I trust**. 9 Friends/relations have **listened to me when I have talked about my feelings**. 11 Friends/relations have **backed the stance that I have taken towards my relative and their substance misuse**. 12 Friends/relations have **put themselves out for me when I needed practical help** (i.e. aid or assistance). 13 Friends/relations have **advised me to focus on myself and my own needs**. 26 Friends/relations have **given me space to talk about my problems**. 52 Friends/relations have **been there for me**. 54 Friends/relations have **provided support for the way I cope with my relative**. 55 Friends/relations have **talked to me about my relative and listened to what I have to say**.	0.913
Negative ADF Support (Support for coping and attitudes and actions towards the using relative).	15 Friends/relations have **undermined my efforts to stand up to my relative's problem drinking or drug taking**. 25 Friends/relations have been **unduly critical of my relative**. 27 Friends/relations have said that **my relative should leave the family home**. 31 Friends/relations have **said things about my relative that I do NOT agree with**. 32 Friends/relations have **avoided me because of my relative's substance misuse**. 34 Fiends/relations have **blamed me for my relative's behaviour**.	0.851

	47 Friends/relations have said that **my relative does NOT deserve help**. 57 Friends/relations have **said nasty things about my relative**.	
Positive ADF Support (Informational - formal and informal - emotional support, support for coping and attitudes and actions towards the using relative).	3 Health/social care professionals have given me **helpful information** about substance misuse. 33 Health/social care professionals have **made themselves available** for me. 48 I have **identified with the information contained within books/booklets** about people living with a substance misuser. 50 Friends/relations have **told my relative off on my behalf**. 51 Friends/relations have **advised me to leave my relative**. 58 I have **confided in my health/social care professional about my situation**.	0.727

Alcohol, Drugs and the Family Social Support Scale

The questionnaire asks about what has happened to you in the last 3 months. The words friends/relations means anyone that you have met in that time, and relative means the person with the drinking and/or drug taking problem. Please tick one answer to each question.

	Never	Once or Twice	Sometimes	Often
1. Friends/relations have **understood what it is like for me to live with my relative's drinking or drug taking**.				
2. Friends/relations have **helped to cheer me up**.				
3. Health/social care workers have given me **helpful information** about problem drinking or drug taking.				
4. I have friends/relations **whom I trust**.				
5. Friends/relations have **listened to me when I have talked about my feelings**.				
6. Friends/relations have **backed the decisions that I have taken towards my relative and their drinking or drug taking**.				
7. Friends/relations have **put themselves out for me when I needed practical help** (i.e. aid or assistance).				
8. Friends/relations have **advised me to focus on myself and my own needs**.				
9. Friends/relations have **questioned my efforts to stand up to my relative's problem drinking or drug taking**.				
10. Friends/relations have been **too critical of my relative**.				
11. Friends/relations have **given me space to talk about my problems**.				
12. Friends/relations have said that **my relative should leave home**.				
13. Friends/relations have **said things about my relative that I do NOT agree with**.				
14. Friends/relations have **avoided me because of my relative's drinking or drug taking**.				
15. Health/social care workers have **made themselves available** for me.				
16. Fiends/relations have **blamed me for my relative's behaviour**.				
17. Friends/relations have said that **my relative does NOT deserve help**.				
18. I have **identified with the information within books/booklets** about people living with a problem drinker or drug taker.				
19. Friends/relations have **told my relative off on my behalf**.				
20. Friends/relations have **advised me to leave my relative**.				
21. Friends/relations have **been there for me**.				
22. Friends/relations have **provided support for the way I cope with my relative**.				
23. Friends/relations have **talked to me about my relative and listened to what I have to say**.				
24. Friends/relations have **said nasty things about my relative**.				
25. I have **confided in my health/social care worker about my situation**.				